

## EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	57	(friction or inertia\$1) near (weld\$3 or bond\$3) same2 (piezo\$1electric\$3 or piezo \$1actuator)	US-PGPUB; USPAT; USOCR	ADJ	ON	2008/11/05 10:24
L2	3	"6299051"	US-PGPUB; USPAT; USOCR	ADJ	ON	2008/11/05 10:32
L3	22	("3738560"   "4157932"   "4881997"   "5144747"   "5681757"   "5699950"   "5786271"   "5816476"   "5884835"   "5969461"   "6051093"   "6078125"   "6153034"   "6193136"   "6220503"   "6299051"   "6311888").PN. OR ("6299051"   "6467670"). URFN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2008/11/05 10:33
S1	2	"20060231593"	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	ADJ	ON	2007/11/19 08:34
S2	33	((ERWIN) near2 (BAYER)). INV.	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/11/19 08:36
S3	1	((BORI\$) near2 (GROHMANN)).INV.	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/11/19 08:36
S4	10	((FRANK) near2 (HERMLE)). INV.	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/11/19 08:36
S5	22	((PETER) near2 (JAENKER)). INV.	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/11/19 08:39
S6	795	piezoactuator	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	ADJ	ON	2007/11/19 11:18
S7	8714	friction near weld\$4	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	ADJ	ON	2007/11/19 11:18
S8	1	S6 and S7	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	ADJ	ON	2007/11/19 11:18
S9	903154	weld\$4	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	ADJ	ON	2007/11/19 11:18

S10	72	S6 and S9	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	ADJ	ON	2007/11/19 11:18
S11	197	(bayer or grohmann or Weg or Jaenker).inv. and (piezoactuator or actuator)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	ADJ	ON	2008/01/31 13:09
S12	197	(bayer or grohmann or Weg or Jaenker).inv. and (piezoactuator or piezoelectric actuator or actuator)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	ADJ	ON	2008/01/31 13:10
S13	1675	(friction or vibrat\$4) near2 (weld\$4 or bond\$4 or fus\$4 or join\$4) same (piezo\$)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	ADJ	ON	2008/01/31 13:21
S14	24586	(weld\$4 or bond\$4 or fus\$4) same piezo\$	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	ADJ	ON	2008/02/05 08:46
S15	11188	S14 and (friction or vibrat\$4)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	ADJ	ON	2008/02/05 08:46
S16	5948	S14 same (friction or vibrat \$4)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	ADJ	ON	2008/02/05 08:46
S17	1088	(friction or vibrat\$4 or ultrasonic) near2 (weld\$4 or bond\$4 or fus\$4) same (actuator or vibrat\$4 near control\$4)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	ADJ	ON	2008/02/05 10:15
S18	34	("20020125297"   "20020168466"   "5031288"   "5248077"   "5302414"   "5366344"   "5460317"   "5469617"   "5486262"   "5682677"   "5697544"   "5718366"   "5718863"   "5769306"   "5794835"   "5813593"   "5865364"   "5971247"   "5975406"   "6050474"   "6068178"   "6070784"   "6095402"   "6102272"   "6106233"   "6168066"   "6173880"   "6216765"   "6244495"   "6257309"   "6524072"   "6669447"   "6779708"   "6910616").PN. OR ("7225967").URPN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2008/02/05 10:31

S19	27	friction near (weld\$4 or bond \$4) same (control\$4 near (vibrat\$4 or move or movement or moving))	US-PGPUB; USPAT; USOCR	ADJ	ON	2008/02/05 12:48
S21	39	((friction or inertia\$1) near (weld\$4 or bond\$4) same (control\$4 near2 (vibrat\$4 or move or movement or moving))	US-PGPUB; USPAT; USOCR	ADJ	ON	2008/02/05 12:50
S22	270	((friction or inertia\$1) near (weld\$4 or bond\$4) same (control\$4 same (vibrat\$4 or move or movement or moving))	US-PGPUB; USPAT; USOCR	ADJ	ON	2008/02/05 12:55
S23	137	((friction or inertia\$1) near (weld\$4 or bond\$4) same (control\$4 with (vibrat\$4 or move or movement or moving))	US-PGPUB; USPAT; USOCR	ADJ	ON	2008/02/05 13:06
S24	10	("3564703"   "3732613"   "3860468"   "4470868"   "5237892"   "5697545"   "6029727"   "6105849"   "6357506").PN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2008/02/05 13:10
S25	55	((oscilla\$4) near (weld\$4 or bond\$4) same (control\$4 with (vibrat\$4 or move or movement or moving))	US-PGPUB; USPAT; USOCR	ADJ	ON	2008/02/05 14:04
S26	14	((friction or inertia\$1 or oscillat \$4) near2 (weld\$4 or bond \$4) same (piezo\$ near3 actuat\$4)	US-PGPUB; USPAT; USOCR	ADJ	ON	2008/02/05 14:09
S27	197	((friction or inertia\$1 or oscillat \$4) near2 (weld\$4 or bond \$4) same (piezo\$)	US-PGPUB; USPAT; USOCR	ADJ	ON	2008/02/05 14:11
S28	607	ultrasonic\$4 near2 (weld\$4 or bond\$4 or fus\$4) same (piezo\$)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	ADJ	ON	2008/02/06 12:30
S29	10	("20020033652"   "20020043894"   "20020154450"   "20030002126"   "6327120"   "6538854"   "6597541"   "6653761"   "6817073"   "7006334").PN. OR ("7215068").URPN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2008/02/06 12:35
S30	15	ultrasonic\$4 near2 (weld\$4 or bond\$4 or fus\$4) same (piezo\$) near2 actuat\$4	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	ADJ	ON	2008/02/06 13:11

S31	76296	(friction or vibrat\$4 or ultrasonic\$4) near2 (weld\$4 or bond\$4 or fus\$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2008/02/06 15:52
S32	1102	S31 and (piezo\$) with (\$3stress\$4 or forc\$4 or compress\$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2008/02/06 15:53
S33	151	S31 same (piezo\$) with (\$3stress\$4 or forc\$4 or compress\$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2008/02/06 15:56
S34	29662	piezo\$ near2 actuator	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2008/02/06 16:20
S35	289	S34 same (weld\$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2008/02/06 16:21
S36	1	"20060231593" and electrical	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2008/02/06 16:31
S37	104	piezo\$1 near2 actuator same electric\$4 near volt\$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2008/02/06 16:33
S38	747	piezo\$1 near2 actuator with piezo\$1 near2 element	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2008/02/06 16:38
S39	7	piezo\$1 near2 actuator with piezo\$1 near2 element same (parallel and series)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2008/02/06 16:39

S40	4	"6299051"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2008/02/06 17:12
S41	1	"20060231593" and crank	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2008/02/06 17:34
S42	596	piezo\$1 near2 actuator with forc\$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2008/02/06 17:42
S43	1	piezo\$1 near2 actuator with forc\$4 same weld\$3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2008/02/06 17:47
S44	7	piezo\$1 near2 actuator same forc\$4 same weld\$3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2008/02/06 17:48
S45	298	piezo\$ with forc\$4 same weld \$3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2008/02/06 17:51
S46	26	piezo\$ with forc\$4 same (friction or vibrat\$4 or ultrasonic) weld\$3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2008/02/06 17:56
S47	27	piezo\$ with (forc\$4 or compression or compressing or compress) same (friction or vibrat\$4 or ultrasonic) weld \$3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2008/02/06 18:09
S48	5362	piezo\$ with (compression or compressing or compress)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2008/02/06 18:10

S49	26	piezo\$ with (compression or compressing or compress) with weld\$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2008/02/06 18:10
S50	5653	(piezo\$ near2 (actuator or transducer) with (forc\$4 or compress\$4))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	ADJ	ON	2008/02/07 10:24
S51	7	S50 same (friction or ultrasonic or vibration\$4) weld \$4	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	ADJ	ON	2008/02/07 10:25
S52	1386	(piezo\$ near2 (actuator or transducer) with (compress \$4))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	ADJ	ON	2008/02/07 10:27
S53	1	("2003/0086748").URPN.	USPAT	ADJ	ON	2008/02/07 10:28
S54	50	((("20040256439") or ("20050001010") or ("20060060634") or ("20060068621") or ("20060231593") or ("20070080195") or ("20070164074") or ("3595462") or ("4249897") or ("4344365") or ("4358262") or ("4429921") or ("4434679") or ("4458905") or ("4469466") or ("4482421") or ("4514613") or ("4517435") or ("4541327") or ("4581517") or ("4793542") or ("4807725") or ("4820363") or ("4831890") or ("4834233") or ("4850772") or ("4880153") or ("4909425") or ("4922161") or ("4979273") or ("4993150") or ("5276304") or ("5328369") or ("5360157") or ("5364006") or ("5423679") or ("5481931") or ("5503555") or ("5531599") or ("5618141") or ("5696328") or ("5707133") or ("5749728") or ("5947882") or ("5979742") or ("6044769") or ("6068178") or ("6176415") or ("6332306") or ("7290695")).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2008/02/07 11:00

S55	0	piezo\$ near2 acutator with pres\$1stress\$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2008/02/07 12:24
S56	0	piezo\$ near2 acutator same pres\$1stress\$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2008/02/07 12:24
S57	0	piezo\$ near2 acutator same pre\$1stress\$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2008/02/07 12:24
S58	336	piezo\$ near2 actuator same pre\$1stress\$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2008/02/07 12:24
S59	229	piezo\$ near2 actuator with pre\$1stress\$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2008/02/07 12:25
S60	5	piezo\$ near2 actuator with (forc\$4 down or hold down or compress\$4 down)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2008/02/07 13:24
S61	0	piezo\$ near2 actuator with (forc\$4 or hold\$4 or compress \$4) with (ultrasonic\$4 or friction or vibration\$4) weld \$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2008/02/07 13:27
S62	0	piezo\$ near2 actuator with (forc\$4 or hold\$4 or compress \$4) same (ultrasonic\$4 or friction or vibration\$4) weld \$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2008/02/07 13:35
S63	111	piezo\$ near2 actuator with (compress\$4 near forc\$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2008/02/07 14:18

S64	4	(ultrasonic) weld\$4 with (compression force)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2008/02/07 14:38
S65	613	(ultrasonic) weld\$4 with (compress\$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2008/02/07 14:39
S66	53	(ultrasonic) weld\$4 with (hold \$4 near down)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2008/02/07 14:39
S67	6	(ultrasonic) weld\$4 with (forc \$4 near2 down)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2008/02/07 14:43
S68	987	(310/311).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2008/02/07 16:05
S69	136	S68 and (piezo\$ near2 actuator and piezo\$ near2 element)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2008/02/07 16:07
S70	27	S69 and (parallel and series)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2008/02/07 16:07
S71	257	310/323.01	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2008/02/07 16:24
S72	247	(310/323.01).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2008/02/07 16:24
S73	48	S72 and (parallel and series)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2008/02/07 16:26
S74	1002	(331/116r).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2008/02/07 16:27



S75	487	S74 and (parallel and series)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2008/02/07 16:28
S76	289	S74 and (piezo\$ and element)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2008/02/07 16:28
S77	205	S75 and (piezo\$ and element)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2008/02/07 16:28
S78	1508	(228/110.1,262,1.1).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2008/02/07 16:33
S79	853	(228/112.1,2.1).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2008/02/07 16:33

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